Pinnacle GeoSciences

13620 NE 20th Street, Suite J
Bellevue, Washington 98005-4901
Tel: 425.649.7535
Fax: 425.649.7537

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Proposal
Ground Water Monitoring and Soil Assessment
Time Oil Co. Property No. 01-063
618 East Toppenish Avenue
Toppenish, Washington
0112-019

Time Oil Co.
2737 West Commodore Way
Seattle, Washington 98199-1233

Attention: Ms. Anastasia Wilkinson

1.0 INTRODUCTION

This submittal transmits our proposal for performing one event of ground water monitoring, and direct push soil assessment at the site of Time Oil Co.'s Property No. 01-063. The site is located at 618 East Toppenish Avenue in Toppenish, Washington. The site is within the boundaries of the Yakama Indian Reservation.

The property is occupied by a convenience store and formerly also had retail gasoline dispensing facilities including three steel USTs (underground storage tanks) with capacities of 12,000, 8,000 and 4,000 gallons. The UST systems were decommissioned and removed by TOC (Time Oil Co.) in October 2001. A representative of Pinnacle GeoSciences observed the decommissioning of the UST system. The results of the UST decommissioning activities are summarized in our ***Summary Report; Underground Storage Tank Removal Oversight*** dated February 19, 2002.

Pinnacle GeoSciences drilled and installed six monitoring wells in April 2002 to further assess soil conditions and to assess ground water conditions. The results of the drilling and initial episode of ground water monitoring are summarized in our *Summary Report; Monitoring Well Installation and Ground Water Sampling* dated June 3, 2002. The three episodes of ground water monitoring which have been completed since the drilling and initial ground water monitoring event have not been reported.

Field screening and laboratory testing during the UST removal indicated that gasoline-related soil contamination at concentrations in excess of the MTCA Method A Cleanup Levels for Unrestricted Land Uses was present around the USTs, and in the base and a portion of the west wall of the excavation completed for the removal of the USTs. The contaminated soil was located in direct contact with ground water. Contaminated soil excavated during the USTs removal was replaced in the excavation as backfill.

Laboratory testing of soil and ground water samples during the subsequent monitoring well installation indicated that soil contamination in excess of the Method A Soil Cleanup levels did not extend significantly beyond the former limits of the USTs excavation. Ground water contamination slightly in excess of the Method A Ground Water Cleanup Levels was present in the well installed in the former UST excavation during the initial ground water monitoring event, but ground water contamination was not detected in any of the wells surrounding the former excavation or in the former service island area.

Gasoline-range organics and BTEX have not been detected in the ground water samples obtained from the six wells, including the well installed in the former USTs excavation, during the subsequent three sampling events. We have not yet prepared a report for these three events.

2.0 PROPOSED APPROACH

In our opinion, it is possible that the contaminant concentrations in the soil that was replaced in the USTs excavation, and in the small amount of contaminated soil in the walls and base, may have significantly decreased via the mechanism of natural biological attenuation since the USTs were removed. The lack of detectable contaminant concentrations in ground water support this possibility. Our proposed approach for the next phase of work at the site is intended to do the following:

- Evaluate whether soil contaminant concentrations in and around the former UST excavation have decreased to less than either the MTCA Method A Soil Cleanup Levels or the acceptable MTCA Method B Site Specific Risk Assessment values.
- Evaluate whether ground water contaminant concentrations in the existing monitoring wells at the site remain less than the MTCA Method A Ground Water Cleanup Levels for one additional quarter. This in conjunction with the past three quarters of ground water testing results will make a total of four quarterly ground water sampling events with contaminant concentrations less than the MTCA Method A Ground Water Cleanup Levels.

We propose that one additional quarterly ground water monitoring event be performed. If contaminant concentrations during this monitoring event are less than the Method A Cleanup Levels, the contaminant levels in ground water will have remained less than the Method A Cleanup Levels for four consecutive quarters, as required by MTCA.

We propose to perform five direct push soil explorations inside the limits of the former UST excavation, and obtain three soil samples from each of these five explorations for laboratory testing. We will also perform one additional exploration just outside the western wall of the former excavation, and obtain one soil sample from this exploration for laboratory testing.

If contaminant concentrations in soil or ground water during this phase of work exceed the applicable cleanup levels (Method A for ground water, Method A or Method B for soil), then we will make recommendations for additional work at the site.

Our specific scope of services for accomplishing these recommendations is presented in the following section.

3.0 SCOPE

The purpose of the scope of work detailed below is to perform additional soil assessment and ground water monitoring at the site of Time Oil Co. Property No. 01-63 in support of the recommendations made in the previous section. The proposed scope of work is divided into three tasks for budgeting purposes. The task numbers in the scope do not correspond with the budgeting task numbers, which are provided for reference. Our proposed scope of work is as follows:

3.1 TASK 1 – GEOPROBE EXPLORATIONS (BUDGETING TASKS 610, 620 AND 630)

1. Perform a public utility locate through the one-call system. An onsite private locate for metallic utilities was performed at the site during a previous phase of work, and therefore will not be repeated during this phase of work.
2. Determine whether permits from the Yakama Nation will be required to perform the Geoprobe explorations.
3. Prepare a site-specific safety plan for the current phase of work at the site.
4. Perform five Geoprobe explorations to a depth of up to 14 feet bgs within the limits of the former exploration. The explorations will be performed using track-mounted, cased Geoprobe rig owned and operated by Holt Drilling, Inc. Continuous soil samples will be obtained from the explorations. Two of the explorations will be performed at the locations of samples EX-6-13.0 and EX-7-12.0, the two base samples obtained from the base of the former USTs excavation which had contaminant concentrations in excess of the Method A Cleanup Levels.
5. Perform one Geoprobe exploration just outside the west wall of the former USTs excavation at the location of sample EX-8-13.0, the only sample obtained from the wall of the former USTs excavation which had contaminant concentrations in excess of the Method A Cleanup Levels. Obtain one soil sample from the exploration at a depth of 13.0 feet bgs, the depth from which sample EX-8-13.0 was obtained.
6. Field screen all soil samples obtained in items 4 and 5 using headspace and sheen screening methodology. Based on the results of field screening, submit three samples from each explorations inside the former excavation, and one sample from the exploration outside the west wall of the excavation, for laboratory testing. The samples will be tested for gasoline-range organics by Ecology Method NWTPH-G; BTEX by EPA Method 8021B; and total lead by EPA Method 6010. Selected soil samples may also be tested for Volatile Petroleum Hydrocarbons, n-hexane, and napthalenes by Ecology Methodology. Diesel-range organics, heavy oils, EDB (ethylene dibromide), EDC (1,2 dichloroethane) and MTBE (methyl tertiary-butyl ether) will not be tested since previous testing at the site indicates that these

products and compounds either were not detected in the samples tested or were detected at concentrations less than the MTCA Method A Soil Cleanup Levels.

3.2 TASK 2 – QUARTERLY GROUND WATER MONITORING (BUDGETING TASKS 410 AND 420)

7. Obtain one round of ground water samples from the seven monitoring wells. Three well volumes of water will be purged from each well using a submersible pump before sampling. Purge water will be transported off site for disposal. Each ground water sample will be obtained with a clean unused disposable bailer.

8. Submit the ground water samples obtained in the sampling event for laboratory testing of gasoline-range organics by Ecology Methods NWTPH-G, BTEX by EPA Method 8021B, andtotal lead and dissolved lead by EPA Method 6010. The dissolved lead samples will be field-filtered through a 0.45 micron filter. EDB, EDC and MTBE will not be tested since they were not detected in soil during previous phases of work.

3.3 TASK 3 – REPORTING (BUDGETING TASK 230)

9. Summarize the observations and results of the Geoprobe explorations and ground water sampling, including boring logs, and tabulated soil and ground water testing data, in a written report. The report will include Method B Site Specific Risk Assessment calculations if any of the soil samples contain contaminant concentrations in excess of the MTCA Method A Soil Cleanup Levels.

4.0 CLOSING

Pinnacle GeoSciences appreciates the opportunity to provide this proposal for monitoring well installation and ground water sampling services. Please call if you have questions concerning this proposal.

Sincerely,
Pinnacle GeoSciences, Inc.

Norman L. Puri, P.E.
Senior Engineer

NLP:SCP

Attachments